UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105-3901

July 11, 2018

Ms. Carol Campagna
Shell Oil Company
20945 S. Wilmington Avenue
Carson, California 90810-1039

RE: Response to EPA Comments on Technical Memorandum: Shallow Soil Sampling Results for Property 23, Pre-Design Investigation, Soil and NAPL Operable Unit, Del Amo Superfund Site, California, prepared by AECOM dated May 16, 2018

Dear Ms. Campagna:

U.S. Environmental Protection Agency (EPA) has reviewed the *Response to USEPA Comments, Technical Memorandum: Shallow Soil Sampling Results for Property 23, Pre-Design Investigation, Soil and NAPL Operable Unit, Del Amo Superfund Site, California,* prepared by AECOM dated May 16, 2018 (Tech Memo). The Tech Memo reports the results of testing analyses conducted on shallow soil (less than 15 feet below grade) at Property 23, and confirms that these data will be used for design purposes for the proposed pilot testing and full-scale remedy implementation. The comments provided by EPA were incorporated in a revised Tech Memo by AECOM dated May 16, 2018. The pre-design investigation was conducted in accordance with the *Draft Remedial Design Work Plan for the Soil and NAPL Operable Unit, Del Amo Superfund Site, Los Angeles, California* (RDWP) dated December 2, 2016 by AECOM. EPA has the following comments:

GENERAL COMMENTS

General Comment 1: The results of analyses of shallow soil in the northwestern and southwestern areas of Property 23 indicated that contaminants of concern (COCs) were below Record of Decision (ROD; EPA; 2013) specified cleanup levels. Accordingly, EPA concurs that soil-vapor extraction (SVE) for shallow outdoor soil in these two areas is not required.

Del Amo Response: Noted.

***EPA Response*:** Acceptable.

General Comment 2: EPA concurs that additional investigation is required in the northwestern area to define the extent of COCs above cleanup levels. This Tech Memo proposes three additional borings north, south, and east of SBL0605. EPA concurs with these locations and requests that additional borings be advanced outboard of these locations if COCs are found above cleanup levels in the proposed boring locations. In addition, the western extent of COCs above cleanup levels shall be defined with at least one additional boring as close as feasible to the facility.

Del Amo Response: If soil sample results indicate COC concentrations above cleanup levels in the three proposed boring locations, additional step-out borings will be advanced to define the extent of COCs above cleanup levels. Implementation of the SVE remedy has been determined for the area to the west of SBL0605, and the SVE radius of influence will encompass the area adjacent to the facility an additional boring is not necessary. Sub-slab vapor sample SGL0946 on the eastern side of the building (AECOM split of sample collected in 2018 by Coca-Cola consultant Ramboll) indicate COC concentrations within the building are below cleanup levels.

***EPA Response*:** Acceptable with the condition that if the proposed boring north and south of SBL0605

indicated contaminants above cleanup levels, additional step-out borings shall also be advanced to the west.

General Comment 3: Shallow soil adjacent to the eastern side of the Coca-Cola bottling facility (SBL0594) showed levels of benzene and ethylbenzene significantly above cleanup levels. The elevated COCs in shallow soil in this area may extend beneath the facility. In accordance with Section 12.5 of the ROD (EPA, 2013), remedy implementation of shallow soil beneath the building is determined by sub-slab vapor concentrations. To date, no sub-slab vapor data have been collected in the vicinity of the potentially impacted shallow soil. EPA requests that sub-slab vapor sampling be conducted along the eastern portion of the facility, and results be compared to cleanup levels prescribed in the ROD. If sub-slab vapor concentrations above cleanup levels are observed, then SVE will be required beneath the facility.

Del Amo Response: Benzene and ethylbenzene data for multiple sub-slab vapor sampling locations within the Coca-Cola building demonstrate that benzene and ethylbenzene concentrations are below action levels along the eastern side of the building. These data are shown on Response to Comments Figure 1, "Benzene and Ethylbenzene Concentrations" (attached) and include the following:

- Historical (2009) sampling locations SGL0925-SGL0929 completed as part of the remedial investigation
- Sampling locations SGL0930, SGL0932-SGL0934, and SGL0939 in the truck maintenance area, which was completed as part of the recent RD investigation.
- 2018 splits of sub-slab vapor samples collected by Coco-Cola's consultant (Ramboll)

Sub-slab vapor concentrations do not exceed cleanup levels; therefore, SVE is not required beneath the facility.

***EPA Response*:** Acceptable.

General Comment 4: Conclusions and recommendations regarding the efficacy of the SVE pilot test and full-scale remedy are premature and not appropriate for a technical memorandum reporting soil results. The apparent distribution of COCs above ROD-prescribed cleanup levels for shallow soil (EPA, 2013), and the tremendous variation in deep soil physical parameters, specifically permeability, will require re-evaluation of pilot-test SVE pilot test extraction and observation well design as presented in the RDWP (AECOM, 2016).

Del Amo Response: No statements are presented in the Tech Memorandum conclusions and recommendations regarding the efficacy of the SVE pilot test and full-scale remedy. The statements made pertain to the area where shallow soil SVE will be implemented for the remedy, and are necessary and appropriate since that was the purpose of the investigation.

The current design of the SVE pilot test wells is sufficient for the purposes of the pilot testing in accordance the RDWP. Design of the full-scale system will take into consideration zones of low permeability and findings from the pilot testing.

***EPA Response*:** Acceptable.

General Comment 5: Tentatively identified compounds (TICs) should be included in the laboratory analytical suite to account for the contaminant mass attributed to various substituted benzene compounds that are not in the standard analytical suite. The mass extraction will be underestimated if TICs are not included in the analytical reporting.

Del Amo Response: TICs will be reported in the future where SVE is to be applied at Property 23.

***EPA Response*:** Acceptable.

SPECIFIC COMMENTS

Specific Comment 1: Please include all analytical reports including the physical testing as an attachment.

Del Amo Response: All analytical reports including the physical testing reports are attached in the resubmitted Tech Memo.

***EPA Response*:** Acceptable.

Specific Comment 2: Table 2 presents analytical data for soil sample SSS02480 collected at 8 feet from boring SBL0597. The attached boring logs indicate that sample SSS02480 was collected from boring SBL0587. Please correct Table 2 and Figures 4 and 6.

Del Amo Response: Table 1 and Figures 4 and 6 have been corrected and are attached in the resubmitted Tech Memo.

***EPA Response*:** Acceptable.

Specific Comment 3: Table 2 presents analytical data for soil sample SSS02479 collected at 14 feet from boring SBL0599. The boring logs attached to the Tech Memo indicate that sample SSS02479 was collected from this boring at a depth of 19 feet. Please correct Table 2 and Figure 6.

Del Amo Response: Review of field notes, sample summary forms, and database entries indicates that sample SSS02479 from SBL0599 was collected from 19 feet below ground surface (bgs) but incorrectly recorded in the database as being collected from 14 feet bgs. The data for sample SSS02479 has been transferred to the Tech Memo regarding deep soil (>15 feet bgs) at SA6 and deleted from the resubmitted shallow soil (≤15 feet bgs) Tech Memo. SBL0599 has been removed from Figure 6.

EPA Response: Acceptable.

Specific Comment 4: The boring log for SBL0597 indicates that soil samples SSS02451 and SSS02452 were collected at 5 feet and 8 feet, respectively. These samples were submitted to the analytical laboratory for testing, but no analysis was performed. As this boring is in close proximity to the targeted shallow SVE remedy area, and because the pre-design investigation was conducted to define the extent of COCs above the cleanup level, these soil samples should have been analyzed to constrain the eastern extent of the remedy area. The eastern boundary of the proposed SVE area will need to be extended eastward to the closest constraining location (SBL0599).

Del Amo Response: There are no shallow soil data for SBL0599 and SBL0597 (see SC2 and SC3 above). Therefore, there are no data constraining the eastern limit of shallow soil impacts, and two shallow soil borings east of existing borings SBL0595 and SBL0592 are proposed to accomplish this. In the event of field evidence of impacted soil at the proposed locations, additional step-out borings will be completed farther to the east. Proposed boring locations are indicated on Response to Comments Figure 2 (attached).

***EPA Response*:** Acceptable.

Specific Comment 5: Boring SBL0601 was advanced in the general area of the targeted shallow SVE remedy, and samples were collected from shallow soil (SSS02487 at 5 feet and SSS02488 at 8 feet) and submitted to the analytical laboratory for testing. No laboratory results are included in the Tech Memo for these samples. The photoionization measurements (PID) for these sampled intervals were 57.2 parts per million by volume (ppmv) and 88.0 ppmv, respectively, thus suggesting moderate level volatile COCs. However, the boring log indicated a PID read of 2,535 ppmv at 11 feet, and 4,742 ppmv at 12 feet. These elevated PID readings are indicative of elevated volatile COCs, and confirmation soil samples should have been collected at these intervals from this location to provide data on the northeastern extent of COCs above cleanup levels. Without additional data, the targeted SVE remedy area will need to be expanded to include this location.

Del Amo Response: While boring SBL0601 was installed to evaluate deep soil, PID readings suggest shallow soil is impacted at this location as indicated in the comment. Two additional borings are proposed to further characterize volatile organic compounds (VOCs) in shallow soil in this area, as indicated on Response to Comments Figure 2 (attached). The first of these soil borings will be coincident with SBL0601, and the second will be located approximately 25 feet northeast of SBL0601. This second soil boring will extend to approximately 40 feet bgs to additionally characterize deep soil conditions to address separate EPA comments regarding deep soil (see General Comment 2 for the Technical Memorandum, Deep Soil Sampling for Source Area 6). Note: SBL0601 is not included on this figure, since it is not a shallow soil sampling location.

***EPA Response*:** Acceptable.

SPLIT SAMPLE EVALUATION

One additional notable difference in the split-sample results was observed for sample locations SSS02381, SSS02410, and SSS02423. The responsible-party laboratory (Eurofins-Calscience) detected high levels of butyl benzene in these three locations, and no butyl benzene was detected by the EPA Region 9 laboratory. Based on findings from the deep soil samples, the EPA Region 9 laboratory determined the large peaks near the retention time of butyl benzene to be a false positive. The peak was mass spectral library searched and reported as benzene, diethyl (a TIC with a 96 percent match). The responsible party should request their laboratory to investigate this misidentified compound, and should provide TIC analysis to accurately account for total VOC mass.

Del Amo Response: AECOM has reviewed the data in question with the laboratory. While butyl benzene and diethyl benzene are isomers and chemically very similar, AECOM agrees that diethyl benzene is a better fit to the GCMS data than butylbenzene. Diethyl benzene will be added to the EPA Method 8260 analyte list to prevent this misidentification in the future.

TICs will be reported in the future where SVE is to be applied at Property 23.

***EPA Response*:** Acceptable.

RECOMMENDATIONS

In accordance with the ROD (EPA, 2013), the aerial and vertical extent of NAPL shall be determined. Additional data are necessary to determine the extent of NAPL.

Del Amo Response: The ROD requirement for the "SVE for VOC-impacted outdoor shallow soil" remedy component is addressed by the data presented and evaluated in the Technical Memorandum for Shallow Soil and Property 23. The ROD requirement is to evaluate the extent of soil exceeding the action levels presented in ROD Table 12-4.1 as further described in the associated ROD text (Item 4, pg 113).

***EPA Response*:** Acceptable.

Regards,

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cc: Pat Gobb, Newfields
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